Karma and Empathy: Challenging Ableist Ideas on Disability Through Technology

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Abstract - **Disabled communities face large levels of social ostracisation in India. Research has shown that a significant number of Indians view disability as divine justice or a curse of God. Disabled people in India suffer due to a lack of awareness and a lack of empathy from the general population. To challenge ableist ideas, the researcher of this paper launched two technology platforms—ZIAI and the Empathy Project. These platforms help people become better allies to disabled communities, and are designed to help the users empathise with disabled people. Over the last 8 months, this work has been translated into 8 Indian languages and has been used by over 115,000 unique users. A significant majority of our users reported feeling more empathetic about disabled people after using the platforms. This paper discusses ways to channel this newly-found empathy into action and ways technologists could build platforms that enable empathy creation at scale.**

keywords - **AI bot, empathy, ludic design, disability, anti-ableism, social equity, disabled communities**

I.INTRODUCTION

Marginalization through ableist stigma is a large potential barrier to achieving social equity—one which, unfortunately, has been consistently present in Indian communities for decades. Disability research and Indian literature indicate that the Hindu concept of karma is central to understanding societal attitudes toward disability in India: often, the spiritual principle of cause and effect is used to explain and justify why disability occurs. In specific, disability is commonly interpreted as punishment for wrongdoings of the disabled person in past lives, or wrongdoings of their parents. [1]

A World Bank research on how disability is viewed among Indians describes disability as "divine justice", with around 50% of the respondents calling disability a curse of God, regardless of whether they had disabled family members. The same study found that in Andhra Pradesh (a state in Southern India), for example, over 40% of respondents believed that disability was divine punishment. The percentage of people holding this belief was the highest amongst older participants, women, illiterate persons, and those of low socio-economic status [1]. Other factors such as a disabled person's social status also play a role in the general acceptance of their particular disability.

At the same time, according to Hindu principles, it is the Dharmic duty of able-bodied individuals to take care of disabled folk through charitable deeds in order to maintain their good karma. Hindu mythology includes representation of disability, but tends towards narratives of disabled men being evil (visually impaired Dritarashtra; orthopedically impaired Shakuni) and disabled women being irrelevant (Lord Vishnu's refusal to marry Lakshmi's "deformed" sister Jyestha: the goddess of misfortune, associated with inauspiciousness and sinners).

These complexities manifest into urban real-life scenarios as an empathy problem. A November 2021 article from The Citizen spotlights disabled persons in India and their experience in employment, with a quote from a dyslexic Indian journalist: "Empathy goes a long way. When there is communication, people around me will know that I am going through a challenge, so they can help me." The report identifies several other problems, including a lack of awareness.

Describing the struggles faced by people diagnosed with ADHD, the report describes how people in professional circles often don't believe that ADHD is real, and the people with ADHD often resort to lying if they want to take a leave for their mental health. Apart from a lack of awareness and a lack of empathy, lack of institutional support (both from the government and private employers) also hurts people with disabilities in India [2].

Generation Z (born 1997 – 2012) is known for its strong political activism. A 2021 Pearson study described "heightened empathy" levels among Generation Z internationally as a result of the pandemic. 67% of the interviewed college students reported an increased interest in social issues. [3]

Asking a group of 50 Indians (ages 16 – 25) whether they believed in the anti-ableist cause yielded a result of 80% of respondents expressing interest. Still, when the same group was asked whether they actually were or ever had been involved in this reduction of stigma, whether through projects, activism, or donation, only 5% could respond in the positive.

Bridging this gap between knowledge and action requires a certain level of solidarity and empathy: feeling a need for change. As writer Matthew Johnson says, "Solidarity, I would argue, is the proper role of the privileged in relation to the oppressed or the underprivileged. It must be felt by the privileged person on a deeper level than guilt… The privileged person must understand that there is an oppressive system at work that manipulates the oppressed and the oppressor alike and that the liberation of one is irrevocably tied to the liberation of the other. The goal of the privileged should not be to pull those who are marginalised up to their level (so to speak) but to challenge the foundation on which those levels rest [for] structural and cultural change." [4] There is great potential in the increase of societal awareness and understanding of disabled communities: after all, social equity is far less difficult to pursue if the society itself agrees that there is justice to be achieved in the first place—specifically, justice by moving away from systemic inequalities and oppression.

I have witnessed accounts of systemic inaccessibility and ableism in my own life and, having the privilege of the medical circumstances putting me in this position being temporary, I have become passionate about building tools to challenge this cause. This prompted the creation of my two technological projects. The first is Empathy Project, a digital art experience where users are guided through the challenging daily choices of a student with chronic pain and PTSD. Secondly, ZIAI (Zoe's Inclusive AI), an AI chatbot that serves as a resource for disabled communities and their loved ones. At its very core, The Empathy Project hopes to make people more empathetic about disabled people, and ZIAI hopes to make people more aware about ableism, its manifestations, and how we can be better allies to disabled communities.

Together, the Empathy Project and ZIAI challenge two of the biggest problems facing disabled people in India today: a lack of empathy and a lack of awareness. As of January 2022, ZIAI has been used over 158,000 times by more than 115,000 unique users. The project has brought on incredible testimonials, some of which are mentioned below:

"Hi Zoe, I wanted to say that I looked into your project and I think it is incredible! Disability in general is very close to my heart as both my siblings fall on the Autism spectrum. I find what you have created to be so thought provoking and positive. It begins to break down so many of the stigmas around the term "disability" in general and opens people's eyes to hurtful habits we often look past without questioning the impact on others".

"Oh dear! My language is so ableist! I had no idea! Some of it has become completely normal. Thanks for bringing this up! Will try to be more mindful."

"This is incredible. I loved using the bot, and asking it about what institutes an inclusive organization. As someone who runs schools across Delhi, I will be keeping these points in mind, so that we can make our buildings as accessible as possible"

"In our panchayat (village government), we really enjoyed doing ZIAI workshops. A lot of people have never heard the word ableism here, but they have seen ableism happen around them. We discussed examples of ableist words in Hindi and how they can hurt other people."

ZIAI's reach has been global, with workshops about anti-ableism conducted using it in rural India. An attendee of one of our workshops reflected: "Zoe *didi*'s application taught us about ableism, something I had never thought about before. Growing up, all the kids in the school always made fun of my friend Suraj because he couldn't hear or speak. I didn't know the word ableism then, but I knew it was wrong. I really liked the ableism workshop we did, and I think people will be more mindful of what they say."

The Empathy Project is in the process of being advertised to prompt user donations to nonprofits such as Enable India, which works to improve the conditions of people with disabilities in India [5].

In this paper, I focus on Indians between the ages of 16 and 25 and ask them to report their perceived empathy levels and feelings towards disabled people and anti-ableism. Following this, they spend a minimum of 10 minutes using The Empathy Project and ZIAI. Finally, they are prompted to gauge the efficacy of the platforms in helping them become more empathetic and aware regarding disabled communities. In a significant majority of the cases, there is a clear increase in enthusiasm, knowledge, and inclusivity in their language and responses.

Experiences such as an able-bodied person stepping into the virtual shoes of someone with a chronic physical and mental condition and witnessing the challenges they go through first hand can spur bystanders to action by stimulating awareness and a sense of injustice with a clear trajectory to solutions: after all, most disabled communities prefer this phrasing over 'people with disabilities' in order to point that it is the system that disables them—the system that is fundamentally built with the assumption that they do not exist. Awareness is key to change here.

The creator of these projects strongly encourages the creation of more platforms like the Empathy Project and ZIAI to amplify voices of marginalised communities and augment empathy and awareness levels in other equally important fields.

II.PRIOR RESEARCH

Both ZIAI and the Empathy Project look at the role of technology in increasing empathy. There has been limited research in this area. Of special note is "Fear Not", a 2011 computer-based anti-bullying-programme designed to foster peer intervention. Much like the Empathy Project, Fear Not puts you in the shoes of a student being bullied, and allows you to reflect how bullying can hurt your confidence and self-worth [6]. The results of the programme are especially heartening. The programme was successful in converting non-involved children into defenders of students who were being bullied.

I was also inspired by Project Pokerface, a Google internal user empathy campaign that encouraged user-involvement as part of the product development cycle [7]. Although the project's scale (1500 employees across 15 sites) brought about challenges, the program helped Google's teams break their preconceived perceptions, develop new perspectives, and build more empathy for their users.

While both "Fear Not!" and "Pokerface" succeeded, ZIAI and Empathy Project hope to take large-scale empathy creation to the next level. Together, both platforms have amassed hundreds of thousands of views, and directed users to non-profit organisations who work to tackle ableist practises across India.

III.DESIGNING ZIAI

ZIAI or Zoe's Inclusive Artificial Intelligence was designed to be a resource for the disabled community and nondisabled individuals looking to be allies. Currently, ZIAI offers the following services:

1. You can chat with ZIAI's AI bot to apply for accessible jobs. For example, you can say "Find me jobs where I can work from home" or "How much should I disclose about my disability when applying for a job?".

Using Wit.ai, I trained ZIAI's neural network with hundreds of ways users could ask basic questions. In this case, our AI bot understands the user is asking about accessible jobs. After classifying the user intent, ZIAI provides the user with resources listing accessible jobs, keeping the location of the user in mind. **Fig. 1** shows a sample response.
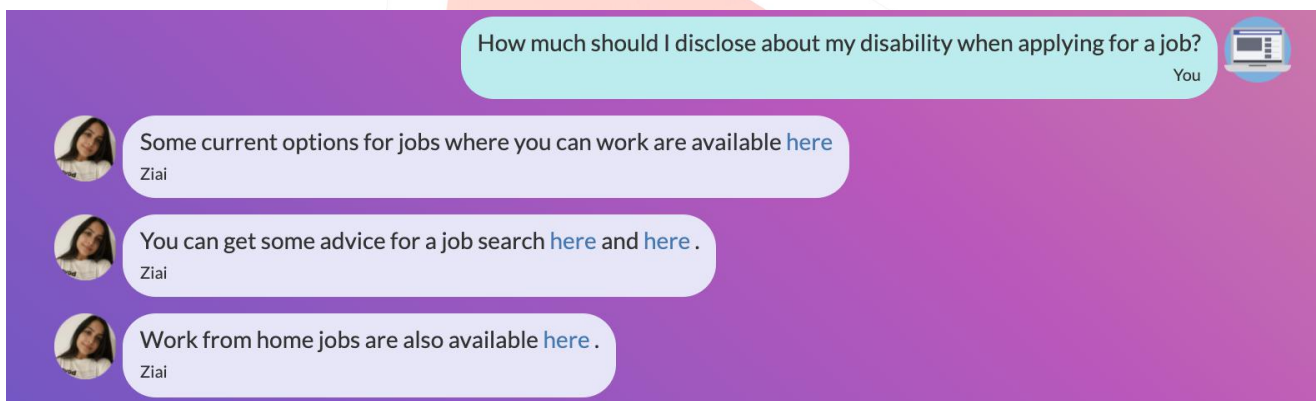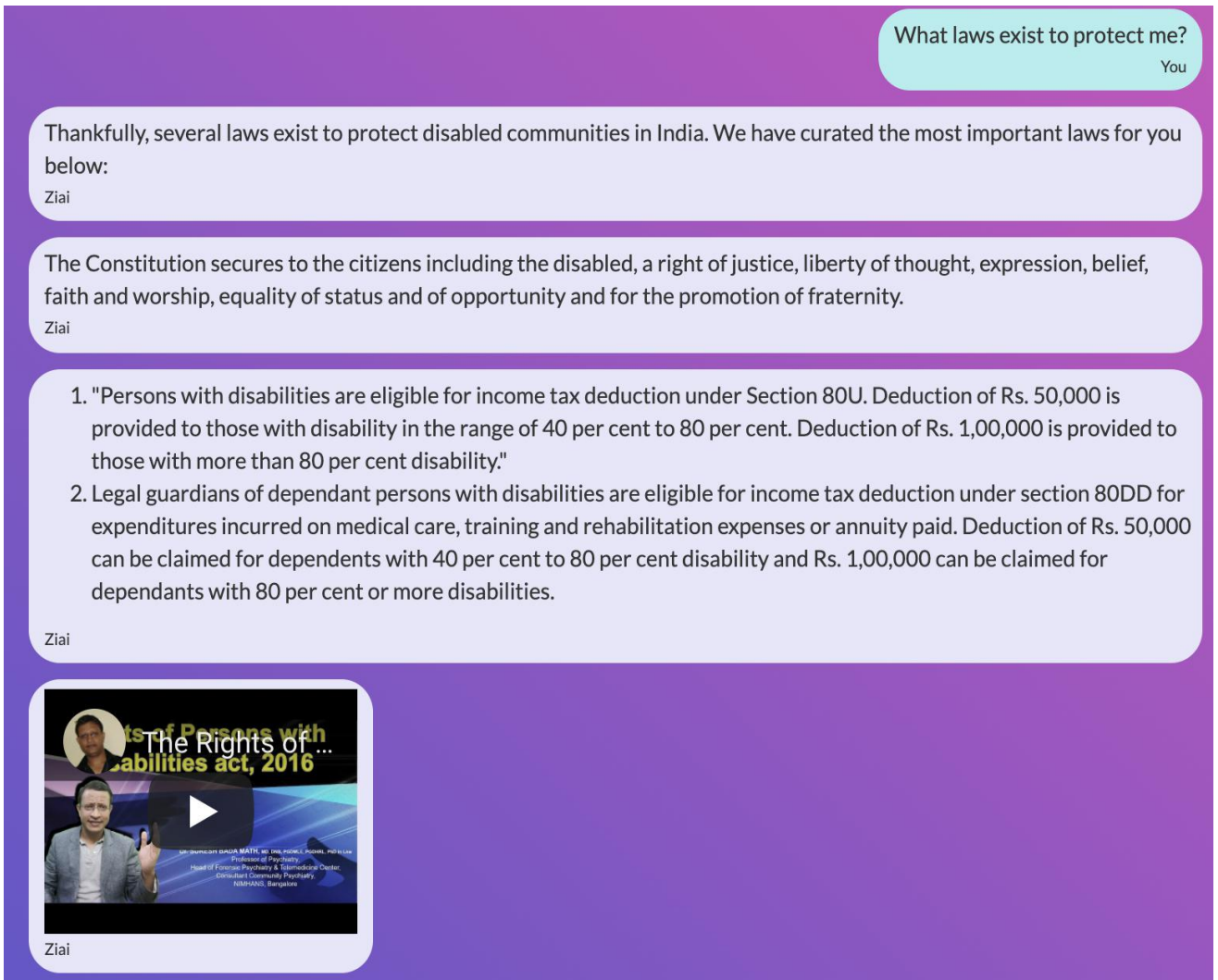

2. You can chat with ZIAI's AI bot on how to make your institutions more inclusive for disabled people. For example, you can say "How can I make the school I work at more inclusive?" or "Does Princeton support students on the spectrum?". Once again, the Wit.ai model was trained with hundreds of ways users could ask this question.

Once the user's intent is correctly classified, ZIAI responds with a checklist of what makes an institution inclusive. This checklist was created in collaboration with anti-ableism experts and allows our users to become better allies to the disabled community.
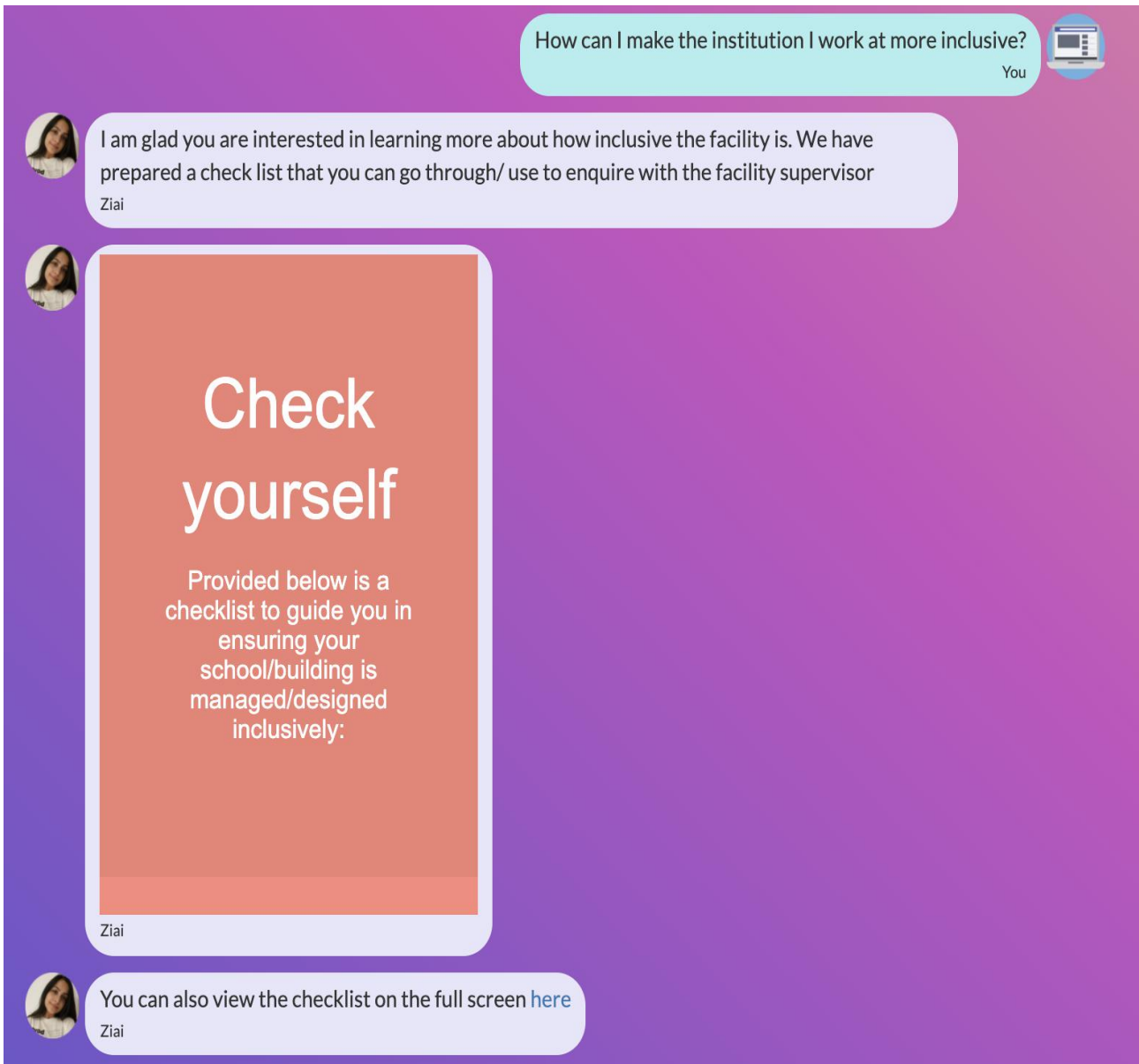
3. You can chat with ZIAI's AI bot on laws that exist to protect disabled communities from discrimination in your country. For example, you can say "Am I qualified for income tax deductions as a disabled person?" or "What laws exist to protect me?".

Using information about your country, ZIAI responds to this question by listing laws that exist to protect disabled people. For example, the figure below shows how ZIAI would respond to this question if it were asked by someone in India.

4. You can chat with ZIAI's AI bot for guidance on how to support friends & family with disabilities. For example, you can say "Where can I learn about fibromyalgia?" or "How can I support my sister through depression?".

In this case, we trained ZIAI's algorithm to identify both the specific disease and user intent within the sentence. We used Wit.ai to build a large corpus of hundreds of ways users could ask this query. We then use the Web.md's API to answer the user's questions.
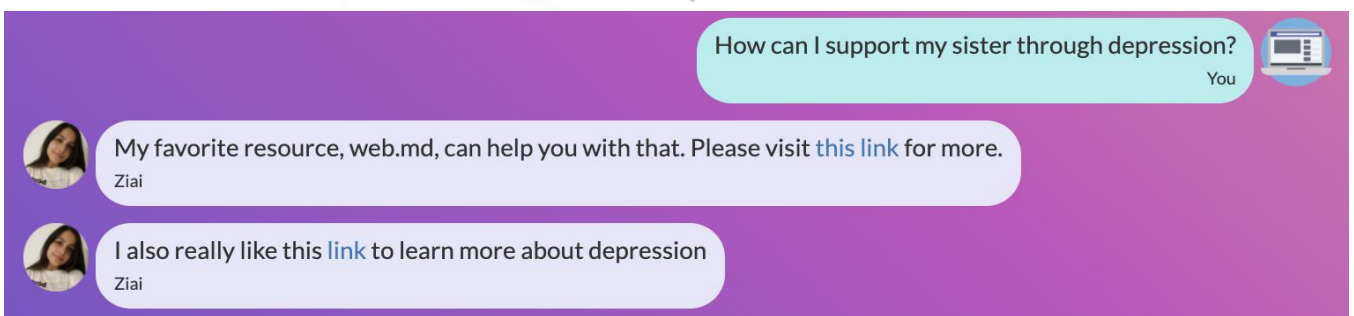
5. ZIAI's AI chatbot is accompanied by an interactive dashboard that hopes to enable making daily behaviours and language less ableist. Using language prompts, ZIAI ensures that our users don't accidentally use words or phrases with ableist implications.

Every day, often unintentionally, we use language that assumes everyone around us is able bodied and neurotypical. Ableist language includes words and phrases that are offensive or insensitive to disabled people. Often, these are metaphors or expressions that nondisabled people use without realising the meanings or implications of.

For example, words like 'retarded' and 'lame' are still commonly heard in every day vocabulary, although their use often equates unpleasant/negative events with disability. ZIAI's anti-ableism language checker gives you four prompts and checks if you accidentally use ableist language. A few examples are shown below:
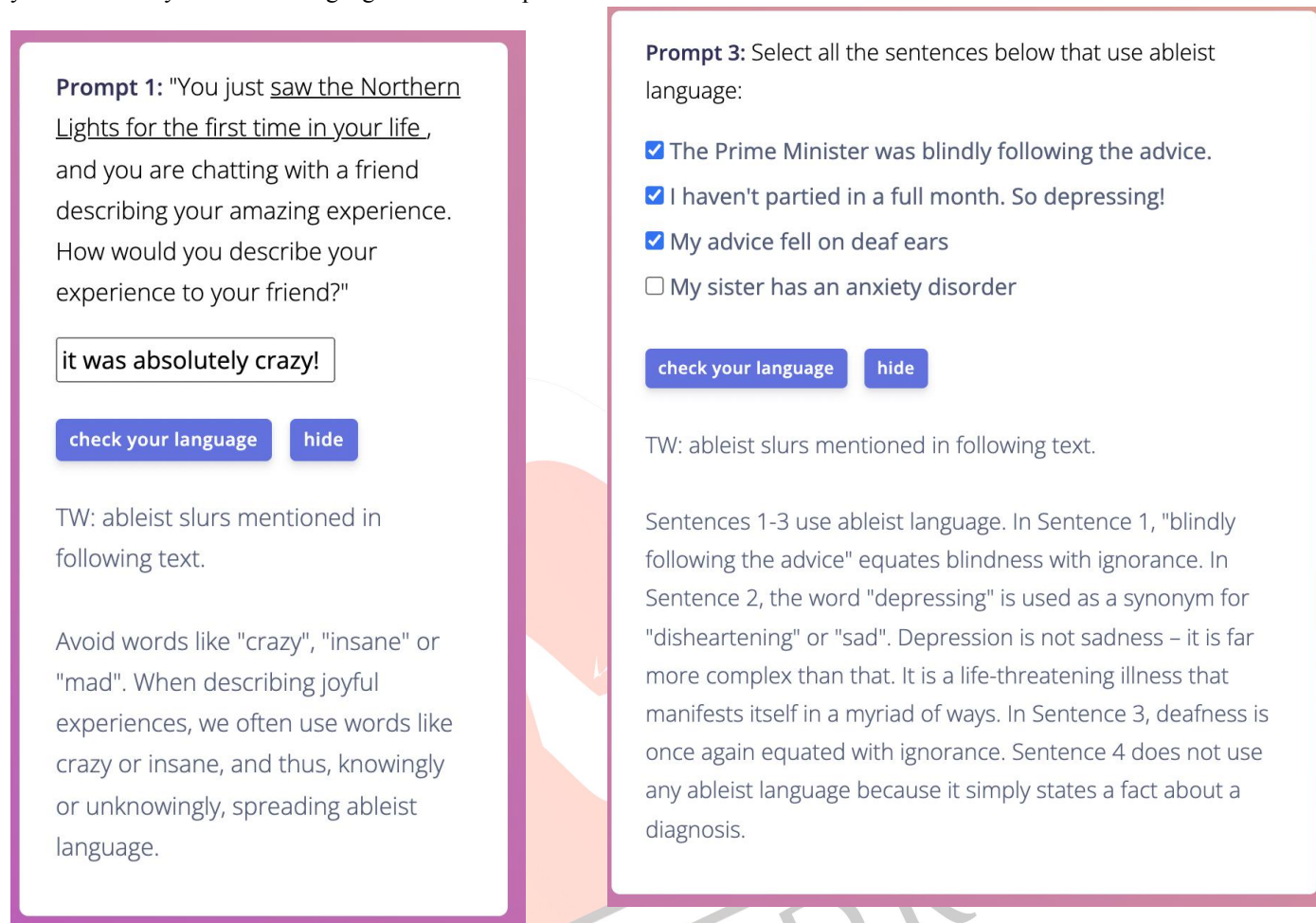
Figure 5: A user tries out ZIAI's anti-ableism prompts.

Figure 6: A user tries out ZIAI's anti-ableism prompts.

IV. DESIGNING THE EMPATHY PROJECT

The Empathy Project takes the user through an average day of a student going through chronic pain, chronic fatigue and PTSD. The users go through the difficult choices they have to make, and how those choices affect our four chosen criteria:

1. How liked you feel by your peers
2. How 'liked' you feel by your teachers
3. Physical well-being
4. Mental well-being

To walk through a sample Empathy Project user flow:

How 'liked' you feel by your peers	How 'liked' you feel by your teachers	Physical well-being	Mental well-being
10	10	6	8

You wake up on one of the first days of school and feel some pain. Stretching with some physiotherapy before your first lesson would probably help, but you don't have much time before class if you don't want to be late. It's also cold outside, and you know that without stretching that could make it worse. None of your teachers know much about your chronic pain/fatigue situation at the moment.

Email your teacher saying you'll be 20 minutes late, explaining your situation, that you had no way of knowing beforehand and that you'll be more attentive in class if you feel better. You hope they'll understand, because you know this may be an inconvenience that doesn't look great on you if they don't.

Decide to deal with it and go to class on time so you don't have to explain the situation. (You think asking to be late may be seen as complicating things, and could potentially put you on your teacher's bad side if they're unsympathetic.)

Figure 7: The first prompt from the Empathy Project.

As shown above, the first prompt asks the user to choose between emailing their teacher that they will be late to the class, or deciding to deal with the pain and making it to the class in time. Irrespective of the choice the user makes, one of the four scores would decline. If the user chooses to be late to class, their perception of how much their teacher likes them declines. If the user chooses to ignore their pain, their physical well-being declines.

Consider the prompt above. Here, the next class' teacher wants to take the class outside since the sun is out. Students in the class are excited for a change in the scene from their ordinary classrooms. However, the chilliness of the wind can aggravate the user's muscle pain. In this prompt, the user has to choose between personal well-being and how liked they feel by their peers.

Once again, irrespective of the choice the user makes, one of the four scores decline. It is important to mention that these are real-world examples of daily struggles faced by students with chronic pain. To ensure the Empathy Project authentically represented the struggles of the population we hope to empathise with, I used scenarios from my own experience as a student with chronic pain and interviewed students that face PTSD and chronic fatigue in my school.

How 'liked' you feel by your peers	How 'liked' you feel by your teachers	Physical well-being	Mental well-being
10	9	8	9

Your next class' teacher wants to take the class outside since the sun's out! Usually, this is really nice and you enjoy it, but today you feel like you should be a little careful since the slight chilliness of the wind could make the pain worse. Your peers are excited for a change in scene from classrooms though!

You ask the teacher if it's possible to stay inside today, explaining your situation privately.

You don't want to go against what most people want to do. Sitting outside is usually nice... you decide to try, and figure out the pain later.

The Empathy Project takes the user through many such prompts where they have to make seemingly mundane but extremely important decisions. Our hypothesis is that going through these prompts will enable users to empathise with people in these communities, and act to help them. At the end of the Empathy Project, users are shown their final scorecard. In the figure below, notice how the example user's physical and mental well-being scores are extremely low.

The user is then directed to a page where they can donate to non-profit organisations working to improve the lives of people in disabled communities. Through the 3 week period the survey was run during (discussed in the next section), I collected over USD 1500 in donations.

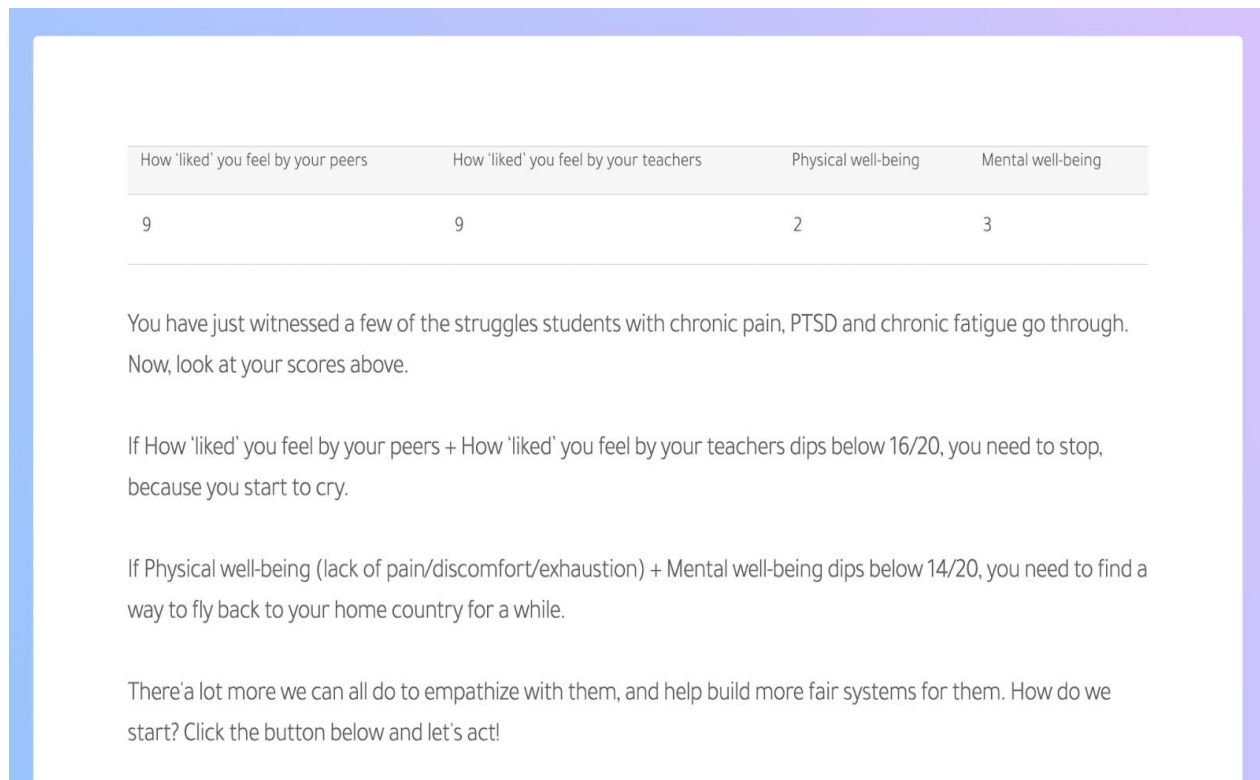| How 'liked' you feel by your peers	How 'liked' you feel by your teachers	Physical well-being	Mental well-being
9	9	2	3

You have just witnessed a few of the struggles students with chronic pain, PTSD and chronic fatigue go through. Now, look at your scores above.

If How 'liked' you feel by your peers + How 'liked' you feel by your teachers dips below 16/20, you need to stop, because you start to cry.

If Physical well-being (lack of pain/discomfort/exhaustion) + Mental well-being dips below 14/20, you need to find a way to fly back to your home country for a while.

There'a lot more we can all do to empathize with them, and help build more fair systems for them. How do we start? Click the button below and let's act!

It is important to remember that one in five American adults (over 50 million people) experience chronic pain. PTSD can occur in any person, of any ethnicity, nationality, or culture, at any age. It affects approximately 3.5 percent of U.S. adults every year, and an estimated one in 11 people will be diagnosed with PTSD in their lifetime. According to the Institute of Medicine, as of 2015, Chronic Fatigue Syndrome occurs in as many as 2.5 million Americans.

Both ZIAI and the Empathy Project hope to create large-scale awareness about ableism and the issues faced by disabled people. Over the last few months, these platforms have been translated into 8 local Indian languages (Hindi, Tamil, Kannada, Telugu, Marathi, Gujarati, Bengali, and Malayalam). ZIAI has now been used by over 115,000 unique users. Most excitingly, my interviews with anti-ableism experts, resources and the Empathy Project have been viewed over 158,000 times.

To understand how my users are interacting with ZIAI and the Empathy Project, I conducted a detailed survey.

V. SURVEY RESULTS

We interviewed 50 users between the ages of 16-25, and asked them the following questions:

   1.   Have you heard of ableism before?

70% of our participants responded with a 'yes'.

   2.   On a scale of 1-10, how much do you know about anti-ableism and what disabled people go through every day?

90% of our participants responded with a score of '1', '2' or '3'. The average score was 2.1.

   3.   On a scale of 1-10, how would you rank your contribution to helping disabled communities globally?

Once again, the vast majority of our participants responded with a score of 1 or 2. The average score was 1.5.

4. *Which of these factor(s) have prevented you from helping disabled people in your community?*

Lack of available outlets to help was the most common reason, followed by a lack of time/mental space.

5. *After using the Empathy Project and ZIAI for 10 minutes, participants were asked if the projects helped them understand what a disabled person goes through.*

100% of our participants said 'yes'.

6. *On a scale of 1-10, did the Empathy Project and ZIAI inspire you to donate time or money to nonprofits that support disabled communities? Please pick 1 if there's no improvement in your inspiration, and 10 if you feel completely inspired to help.*

48 of the 50 participants said they felt really inspired to help and picked a score of '9' or '10' on the scale. The remaining 2 participants picked a score of '8'. The average score was 9.32.

We conducted detailed interviews with our users. Some of the feedback we received has been shown below:

"I think using this as a tool to spread awareness is really effective to educate people who aren't too knowledgeable about ableism. I think the prompts were really insightful and it really broadened my knowledge about this issue.": P1, 17, female, high school student

"The Empathy Project really got to me. It is hard to think that such basic day to day choices can be so difficult for so many people. I am really excited to be able to help and donate my time and money to some good nonprofits in this space": P24, 23, female, college student

"This will be a huge learning process for all of us. There are terms here that I regularly use, and never thought of it being in wrong terms. The platform is incredibly well-thought of, and I learned so much from it": P12, 19, male, college student

VI. CONCLUSION AND FUTURE WORK

My research shows that building technological platforms such as ZIAI and the Empathy Project can help make people aware and empathetic about the challenges faced by disabled people at scale. Our users specifically appreciated how the Empathy Project allowed them to live a day in the shoes of someone who has chronic pain, PTSD, and chronic fatigue. Prior research has shown that proximity and familiarity often breeds empathy [8]. By making users more aware of the challenges faced by disabled people, we are able to make them more empathetic. Users also appreciated ZIAI's anti-ableist language prompts. Past work has proposed that educational platforms can benefit from ludic, gamified design [9]. ZIAI's language prompts use ludic design to help users understand how to avoid using ableist language.

These techniques have enabled us to reach a large number of users. In our survey, 100% of the interviewed users said that ZIAI and Empathy Project helped them understand what a disabled person goes through. The vast majority of our users said that they felt highly inspired to help disabled people after using our technological platforms.

This is especially exciting, as I strongly believe that the success of ZIAI and the Empathy Project makes the case to build many more such platforms that can be used to augment empathy and awareness levels in other equally important fields.

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